scale between *Colaptes auratus* and *C. cafer*." This conclusion seems inevitable, for, while the transition between geographic races is apt to be gradual and symmetrical, what we have here is quite the reverse, an utterly irregular intergradation with, at the same time, all sorts of asymmetrical combinations of the characters of the two birds.

Mr. Allen has investigated also the geographical, individual and seasonal variation among the Flickers, with interesting results. Geographical variation in size amounts in *C. auratus* to about 10 per cent in the length of wing between Arctic America and southern Florida, while the West Indian forms are even smaller. The difference between *C. c. saturatior* and *C. rufipileus* is nearly parallel to this, but in *C. cafer* itself the variation is less uniform with latitude, being perhaps complicated, Mr. Allen suggests, by opposing effects of altitude. *C. chrysoides* shows hardly any difference in size geographically. In the Florida *auratus*, though it is smaller and darker than the northern bird, the average difference "proves too slight and too inconstant, in either size or color, to make a separation practicable."

Individual variation is considerable, both in size and in color. The bill varies in length from 15 to 25 per cent, the wing from 8 to 12, the tail from 12 to 18 In color the variation "affects (1) the size and shape of the circular black spots on the lower plumage, (2) the width and number of the dusky crossbars of the upper plumage, (3) the size and form of the malar stripe, (4) the presence or absence of black spots on the white rump, (5) the tone of color suffusing the general plumage." These variations are discussed in detail, as is the tendency in the females to develop a malar stripe.

The only seasonal changes in color are those due to fading and abrasion.

Throughout the group the nestling plumage differs from the adult chiefly in showing more or less red in the crown and in having the markings in general coarser and heavier. An interesting variation is shown in the malar stripe which in the adults is so prominent, and yet so unstable, a character. Young *C. auratus* shows in both sexes the black malar stripe that in the adult is confined to the male. In *C. chrysoides*, *C. cafer*, and *C. c. saturatior* this marking is red in the male, and rufous in the female, as in the adults.—C. F. B.

Chapman on the Origin of the Avifauna of the Bahamas.* — Mr. Chapman gives a general review of the bird life of the Bahamas, grouping the species, in accordance with their distribution, primarily into two classes: (1) those of more or less general distribution, numbering 32 species, and (2) species peculiar to the Bahamas, 24 in number. The species of the first class are further divided, as regards their distribution, into cos-

* The Origin of the Avifauna of the Bahamas. By Frank M. Chapman. American Naturalist, June, 1891, pp. 528–539.

mopolitan, continental, North American, West Indian, etc., while those of the second class are compared in detail with their nearest allies. His conclusions are (1) that the Avifauna of the Bahamas is strongly West Indian, and that this group of islands is entitled to rank as a fauna of the Antillean region, the endemic species having been derived from West Indian stock, with a slight intrusion from Florida; (2) that Cuba has been the source of the greater number of forms; (3) that while North American species occur numerously as migrants, they have not assisted in forming the resident avifauna; (4) that the avifauna is of comparatively recent origin; (5) that forms having a common ancestry, and which now occupy widely separated areas, may have become so differentiated as to resemble more each other than they do the original stock (*e.g.*, *Geothlypis beldingi* of Lower California as compared with the Bahama and Florida forms, with nearly parallel cases in the genera *Spindalis*, *Vireo*, and *Certhiola*); (6) that certain Bahaman forms, occupying contiguous islands, have become differentiated under practically the same climatic or physiographic conditions — in other words, simply through isolation; (7) that we may probably assume that some of these endemic forms owe their origin primarily to features of individual variation, which through isolation, and hence close interbreeding, have become permanent. Several of these important generalizations we do not remember to have seen previously stated. The paper is thus of unusual interest.— J. A. A.

Chapman on the Grackles of the Subgenus Quiscalus.* — This interesting discussion of a highly perplexing subject — the relationships of our Grackles — is the result of the study of a series of over eight hundred skins, largely of breeding males, from many widely separated localities. This series shows the breeding range of *æneus* to extend from Texas and Louisiana to Great Slave Lake, "and from the eastern slopes of the Rockies to the western slopes of the Alleghanies, while from Massachusetts to Nova Scotia it reaches the Atlantic seaboard; *Quiscalus quiscula aglæus* is typically represented from New Orleans to Charleston, and southward to the extreme point of the Florida peninsula; and *Quiscalus quiscula* breeds from the northern limit of the range of *aglæus* northward to the southern limit of the range of *æneus* in the lower Connecticut and Hudson River Valleys."

As a preliminary to the discussion of their relationships, a detailed description is given of the coloration of each form, especially of *quiscula*, of which lack of space unfortunately permits us to quote but little.

In *æneus*, throughout its range, aside from a trifling seasonal, and considerable sexual, difference in brilliancy, there is practically no variation in the colors of the plumage, except of the head and neck which in both

*A Preliminary Study of the Grackles of the Subgenus *Quiscalus*. By Frank M. Chapman. Bulletin American Museum of Natural History, Vol. IV, No. 1, Article I, Feb. 25, 1892, pp. 1–20; map.